We claim:

1. A method for changing a reserved capacity for a given tunnel, comprising:

receiving an indication of traffic demand for a tunnel through a network;

based on said received indication, determining an estimated total capacity requirement;

comparing said estimated total capacity requirement to said reserved capacity; and

where said estimated total capacity requirement exceeds said reserved capacity, requesting an increase of said reserved capacity.

2. The method of claim 1 further comprising, where said reserved capacity exceeds said estimated total capacity requirement, requesting a decrease to said reserved capacity.

3. The method of claim 1 where said requesting further comprises:

determining whether a current path of said tunnel has sufficient available capacity to accommodate said estimated total capacity requirement, said current path having a source node and a destination node; and

where said current path of said tunnel has sufficient available capacity to accommodate said increase, transmitting signaling to nodes along said current path to request said increase of said reserved capacity.

4. The method of claim 3 further comprising:

where said current path of said tunnel has insufficient available capacity to accommodate said increase,

determining a plurality of paths through said network from said source node to said destination node, where each path of said plurality of paths has an associated available capacity; and

selecting one path of said plurality of paths having sufficient associated available capacity to accommodate said estimated total capacity requirement.

5. The method of claim 4 further comprising:

transmitting signaling to nodes along said selected one path of said plurality of paths to request said estimated total capacity requirement; and

moving said tunnel to said selected one of said plurality of paths.

6. The method of claim 3 further comprising, where said current path of said tunnel has insufficient available capacity to accommodate said increase,

determining a plurality of paths through said network from said source node to said destination node, where each path of said plurality of paths has an associated available capacity;

where said estimated total capacity requirement exceeds said associated available capacity of each of said plurality of paths,

determining a limiting link in said current path, where said limiting link has a minimum available capacity among links in said current path; and

communicating with a lower level network to request an increase of available capacity on said limiting link.

7. The method of claim 6 further comprising,

where said request to said lower level network is accepted:

transmitting signaling to nodes along said current path to request said increase of said reserved capacity to said estimated total capacity requirement.

8. The method of claim 6 further comprising,

where said lower level network returns an available capacity of said limiting link and where said estimated total capacity requirement exceeds said available capacity of said limiting link,

selecting one path of said plurality of paths having a maximum associated available capacity among said plurality of paths;

where said available capacity of said limiting link exceeds said associated available capacity of said selected one path of said plurality of paths:

transmitting signaling to nodes along said current path to request that said reserved capacity be increased to said available capacity of said limiting link.

9. The method of claim 6 further comprising,

where said lower level network returns an available capacity of said limiting link and where said estimated total capacity requirement exceeds said available capacity of said limiting link,

selecting one path of said plurality of paths having a maximum associated available capacity among said plurality of paths;

where said available capacity associated with said selected one path of said plurality of paths exceeds said available capacity of said limiting link:

transmitting signaling to nodes along said selected one of said plurality of paths to request said estimated total capacity requirement; and

moving said tunnel to said selected one of said plurality of paths.

10. The method of claim 6 further comprising,

where said request to said lower level network is rejected:

selecting one path of said plurality of paths having a maximum associated available capacity among said plurality of paths;

transmitting signaling to nodes along said selected one of said plurality of paths to request said associated available capacity; and

moving said tunnel to said selected one of said plurality of paths.

11. The method of claim 1 wherein said receiving said indication of traffic demand comprises:

receiving an indication of tunnel capacity in use by serviced requests; and

receiving an indication of tunnel capacity refused admission to the tunnel.

12. The method of claim 1 wherein said increase of said reserved capacity comprises a difference between said reserved capacity and said estimated total capacity requirement.

13. The method of claim 1 wherein said increase of said reserved capacity comprises a difference between said reserved capacity and a sum of said estimated total capacity requirement and a buffer value.

14. A method of selecting a path from a source node to a destination node comprising:

labeling said source node;

assigning a value to a reported bandwidth associated with each of a plurality of unlabeled nodes where:

if an unlabeled node has a link from said source node, said reported bandwidth is assigned a value based on a bandwidth of said link from said source node, otherwise said reported bandwidth is assigned a value of zero;

until said destination node is labeled,

selecting a next node, among said plurality of unlabeled nodes, having a maximum reported bandwidth value;

labeling said next node;

processing nodes connected to said next node to reassign corresponding reported bandwidth values; and

where said next node is said destination node, selecting a path from said source node to said destination node corresponding to said maximum reported bandwidth value associated with said next node.

15. An apparatus for changing a reserved capacity for a given tunnel, comprising:

means for receiving an indication of traffic demand for a tunnel through a network;

means for determining an estimated total capacity requirement based on said indication;

means for comparing said estimated total capacity requirement to said reserved capacity; and

means for requesting an increase of said reserved capacity.

16. A computer readable medium for providing program control for a node in a network, said computer readable medium adapting said node to be operable to:

receive an indication of traffic demand for a tunnel through said network;

determine an estimated total capacity requirement based on said received indication;

compare said estimated total capacity requirement to a reserved capacity for said tunnel; and

where said estimated total capacity requirement exceeds said reserved capacity, request an increase of said reserved capacity.

17. A processor, in a node in a network, operable to:

receive an indication of traffic demand for a tunnel through said network;

determine an estimated total capacity requirement based on said received indication;

compare said estimated total capacity requirement to a reserved capacity for said tunnel; and

where said estimated total capacity requirement exceeds said reserved capacity, request an increase of said reserved capacity.

18. A system for automated adjustment of a reserved capacity for a tunnel through a network comprising:

a tunnel signaler;

an admission controller;

a path selector,

a capacity manager operable to:

receive, from said admission controller, an indication of traffic demand for said tunnel;

determine an estimated total capacity requirement based on said received indication;

compare said estimated total capacity requirement to said reserved capacity; and

where said estimated total capacity requirement exceeds said reserved capacity, communicate with said tunnel signaler to request an increase of said reserved capacity.

19. A data structure for use in communicating information regarding traffic demand for a tunnel comprising:

an indication of tunnel capacity in use; and

an indication of total capacity refused admission to said tunnel.